

**Venoco, Inc. Temporary Crude Oil Trucking Project
Project Description**

1. INTRODUCTION

Venoco's Ellwood crude oil production is normally shipped via Venoco's 6-inch diameter Line 96 which connects Venoco's Ellwood Onshore Facility (EOF) to the Plains All American Pipeline Line 901 (Plains pipeline). The point of connection is approximately 8.5 miles west of EOF. The Plains pipeline is currently inoperable in Santa Barbara County due to the May 19, 2015 spill incident near Refugio Beach State Park and associated ongoing repairs. Venoco's Platform Holly and Ellwood Onshore Facility have been shut down since May 21, 2015 as a result of the pipeline failure. The duration of the unavailability of the Plains pipeline is unknown.

Pending the return to service of the Plains pipeline, Venoco seeks an emergency permit from the City of Goleta to allow short-term trucking of crude oil (34 truckloads over 17 days) in order to enable time-sensitive inspections and maintenance, and thus ensure the safety, reliability and overall mechanical integrity of the onshore and offshore equipment, as described further below.

Venoco's preferred destinations include the Phillips 66 Santa Maria Pump Station on Battles Road in Santa Maria (at the former Battles Facility site) or the Crimson, LP (Crimson) Santa Paula Crimson Truck Rack in Santa Paula. Phillips 66 has confirmed the availability of these existing and fully permitted sites for the proposed deliveries.

1.1 Emergency Permit Applicability

The City of Goleta's Coastal Zoning Ordinance (CZO) Section 35-154(5)(i) provides development standards for onshore processing facilities necessary or related to offshore oil and gas development. Subsection 5(i)(4) sets forth conditions under which transportation by a mode other than pipeline may be permitted. Sub-parts 5(i)(4)(a) and 5(i)(4)(d) list specific findings related to pipeline unavailability that are directly applicable to Venoco's Ellwood operations (i.e., a pipeline to the shippers' refining center of choice is unavailable within a reasonable period of time, and an emergency [in this case, the Plains pipeline rupture and associated spill] has precluded use of a pipeline).

CZO Section 35-171 (Emergency Permits) sets forth the procedures for a permit application in the event of an emergency. This project description package provides the information necessary to support the City of Goleta's grant of a conditional temporary permit for the loading and trucking of oil from the EOF consistent with the applicable CZO standards noted above.

1.2 Emergency Permit Basis

Limited short-term crude oil trucking will allow for time-sensitive inspection and maintenance of onshore and offshore crude oil and gas production equipment that is scheduled and required in accordance with regulations and permit conditions but that cannot currently be completed due to the facilities being at capacity and pipeline transportation being shutdown. Long term unplanned

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shutdowns can pose problems as process facility systems are designed to operate and flow. Consequently, long term static conditions absent proper planning and preparation could result in potential safety or environmental impacts. Accordingly, the following necessary inspection and maintenance activities proposed to occur require the processing and draining of oil and oil/water from certain facilities. These activities will ensure the continued safety, reliability and overall mechanical integrity of the onshore and offshore equipment during this shutdown period.

Shipping Tank T-203 Inspection. Recent external tank inspection has identified external corrosion features on shipping tank T-203 which requires further evaluation. In order to further evaluate these features Venoco needs to enter the tank to perform an internal tank inspection. Under normal circumstances the tank would be isolated and drained while under normal operations and prepared for inspection. Trucking is necessary to enable the tank to be emptied and prepared for inspection.

Vessel inspections. Internal inspections are due for two vessels on Platform Holly and two vessels at the EOF. These vessels currently hold approximately up to 1,500 barrels of oil and oil/water emulsion. The fluids in these vessels currently cannot be processed in the production system and drained due to the high volume of oil in shipping tanks T-202, 203 and 204.

Offshore emulsion pipeline protection. Following the emptying of the vessels on Platform Holly, the Platform Holly to shore emulsion pipeline must be similarly set in a static protective mode. This consists of evacuating the pipeline of all oil and water and setting the pipeline in natural gas with corrosion inhibitor to prevent internal pipeline corrosion for the period time the pipeline is not operating. Additionally, Venoco will run its annual smart pig of the emulsion pipeline earlier than normally planned; this inspection is planned for August 10, 2015.

The total estimated volume of stored crude oil to be removed from the facilities is 5,500 barrels. Following completion of this work the Platform and EOF will contain less hydrocarbons and hazardous materials in an idled state, thus reducing the long-term potential for upset conditions that could impact the public or the environment.

As discussed further in this application package, previous studies have demonstrated that the levels of risk associated with truck transportation of crude oil would be well below the City and County's adopted Public Safety Thresholds of significance for public risk. In particular, Venoco previously applied to the City of Goleta (case# 06-186-DP) for interim trucking of crude oil from the EOF. Although the project was not pursued, the project description included appropriate safety features and demonstrated that the proposed trucking operations would not result in a significant public safety risk or environmental impact. Other recent studies support this conclusion, such as the County of Santa Barbara's analysis of compressed natural gas and natural gas liquid (NGL) transportation associated with Southern California Gas Company's La Goleta

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Storage Field Enhancement Project (for information see Final EIR Section 4.9 Hazardous Materials/Risk of Upset, available online at:

<http://www.sbcountyplanning.org/energy/projects/SoCalGasStorage.asp>).

2. PROJECT DESCRIPTION

The following project information describes the temporary truck loading facility location, design, operations, truck routing, and other details. This package also discusses potential impacts associated with air quality, water quality, and public safety, as well as contingency actions and mitigations to address potential impacts.

2.1 Trucking Frequency and Permit Duration

An estimated 34 crude oil trucks over 17 days (an average of 2 trips per day) will be loaded from the EOF truck loading site based on a standard tanker truck capacity of 160 barrels and the total estimated stored crude oil volume of 5,500 barrels. Venoco will contract for a dedicated truck operator to complete two loops per day between EOF and the designated delivery locations during daylight hours.

For the period of time of the proposed oil trucking, gas processing at EOF will be isolated and made safe, and trucking of NGL and LPG will be suspended, thus reducing overall truck trips. Blending of NGLs with the crude oil will also be suspended during crude oil trucking operations.

2.2 EOF Current Operations

Crude oil loading would occur within the fenced and gated EOF. The EOF is located in western Goleta at 7979 Hollister Avenue on a 4.5-acre triangular-shaped parcel (APN 079-210-042) enclosed by chain-link fencing. Surrounding uses include Sandpiper Golf Course to the east, Bell Creek lagoon, the beach and Pacific Ocean to the south, open space and Bacara Resort and Spa to the west, and Hollister Avenue, Union Pacific Railroad and US 101 to the north.

The EOF is a manned facility with existing oil and gas treating operations (including receipt and dispatch of various trucks for typical industrial activities such as vacuum trucks, construction trucks, delivery trucks, and tanker trucks) occurring 24 hours per day 7 day per week, and with easy on/off access to the US 101 freeway. At least 4 operators are always on duty. The EOF has the capability to treat 20,000 barrels per day (BPD) of wet oil and 20,000 thousand standard cubic feet per day (MSCFD) of gas produced from offshore Platform Holly. Currently, Santa Barbara County Air Pollution Control District (APCD) Permit 7904-R7 limits throughput at the EOF to 13,000 dry BPD of oil, based on permit emissions limits of dry crude oil tanks TK-202 and TK-203. As part of the existing production activities, the oil treating facilities at the EOF perform the following functions: remove produced water from the crude oil/water emulsion; reduce the hydrogen sulfide (H₂S) content in the treated crude oil to 70 parts per million (ppm)

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or less (on a weight basis); inject the produced water into a permitted onshore water disposal well; and, deliver the dry crude oil to the 6-inch diameter Line 96. The current typical H₂S content is 5 ppm (0.0005%) at the oil lease automatic custody transfer (LACT). Line 96 runs 8.5 miles northwest to a tie-in point on the Plains pipeline Line 901. Sales gas is delivered to The Gas Company at a public utility gas interconnection on Hollister Avenue west of EOF.

2.3 EOF Truck Loading Equipment and Temporary Trucking Operations

The attached EOF Site plan (Drawing F-9769) shows the oil truck loading location in the central portion of the EOF. This area is also shown in the attached site photographs. The loading equipment consists of an existing LACT unit, temporary hose connections to the vapor recovery system and for truck loading, and associated existing piping and electrical connections. Loading operations will occur within the existing paved and curbed roadway which serves as immediate containment for spilled fluids, if any, which fluids can drain to the onsite sump system which serves as secondary containment.

Piping and Instrumentation Diagrams F-9760-3, F-9760-7 and F-104 indicate the temporary truck loading connections including the temporary truck loading hose at the meter prover connections, and a hose connection between truck loading vapors and the EOF vapor recovery unit.

LACT #1 Charge Pump P-222 will be used to transfer crude oil from TK-202 and TK-203 through LACT #1 to the waiting truck. The typical loading rate will be 350 to 450 barrels per hour (BPH), at a pressure of 100 to 150 psig. The LACT skid will continue to operate in the same manner as though the crude oil was being delivered to Line 96. Oil from the LACT will flow through a proving connection to the waiting truck. Oil Shipping Truck P-203 will not be used for the truck loading. The LACT flow meter will be set to deliver the required batch load of 160 barrels of oil, and then automatically shut down the truck loading flow. In the event that the truck fills before the set volume from the LACT is reached, the truck's overflow prevention device (e.g., Scully), will provide secondary loading shutoff.

A truck loading procedure is attached. As the truck arrives, the driver will handle inspection and maintenance on the truck prior to and during the loading procedure. The truck will be loaded with crude oil and will immediately leave the site for transport offsite. The project will not generate a new parking load. No new parking spaces are proposed.

Venoco personnel will be present during loading operations. Truck loading equipment inspections and maintenance will take place consistent with current practice, with additional frequency commensurate with the increased trucking activity.

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2.4 Truck Destinations and Routing

Venoco will ship the crude oil to two identified destinations that can accommodate an addition of two truckloads (320 barrels) per day on a temporary basis: the Phillips 66 Santa Maria Pump Station in Santa Maria and the Santa Paula Crimson Truck Rack in Santa Paula. Phillips 66 has confirmed the feasibility of receiving truck deliveries at either their Santa Maria Pump Station and/or the Santa Paula Crimson Truck Rack subject to further confirmation of available capacity at the time of Venoco's permit approval, and subject to an amended purchase agreement between Phillips 66 and Venoco. Phillips 66 has also confirmed that both locations are fully permitted truck unloading facilities.

If these facilities are not available, then crude oil could be shipped to one or more potential alternative locations such as facilities in the Bakersfield area of Kern County.

The scheduling of shipments to any one location will most likely be based on coordination by the receiving facility. The following sections describe the truck routes to these destinations.

2.4.1 EOF to Santa Maria Pump Station

Truck access from EOF via Hollister Avenue and the US 101/Hollister interchange to Santa Maria Pump Station is via US 101 northbound for 60 miles to the East Betteravia Road exit (Exit 169). Trucks will then run 1 mile east on Betteravia Road, then 0.5 miles north on Rosemary Rd, then 0.4 miles west on Battles Road to the Battles Facility entrance (approximately 62 miles total each way). Figure 1 shows the truck routing between EOF and the Santa Maria Pump Station and the transportation route near the station.

2.4.2 EOF to Santa Paula Crimson Truck Rack

Truck access from EOF via Hollister Avenue and the US 101/Hollister interchange to Santa Paula Crimson Truck Rack is via US 101 southbound for 44 miles to the US 101/State Route 126 interchange, then 12 miles to the State Route 126/10th Street interchange in Santa Paula, then 0.75 miles to the facility entrance via E. Harvard Blvd and S. 12th Street (a City-designated truck route), for a total distance of approximately 57 miles. An alternative access is available via the Route 126/Hallock Drive intersection, then 1.2 miles to the facility entrance via E. Telegraph Road, E. Main Street, and N. 12th Street (Figure 2). Trucks would enter the facility main gate on N. 12th Street and then enter the existing crude oil loading facility. Crude oil would be shipped through the facility to refinery destinations.

Table 1 summarizes the potential delivery facilities and affected roadways. No new public or private roads or parking are proposed.

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Table 1 Potential Regional Shipping Destinations

Destination Facility	Facility Address	Affected Roadways
Santa Maria Pump Station (former Battles Facility)	1580 East Battles Road, Santa Maria CA 93454 Lat: 34°55'48.14"N Long: 120°24'25.95"W	Hollister Ave. (west of US 101/Winchester Cyn Road interchange, Exit 110) Betteravia Road (east of US 101) Rosemary Road Battles Road
Santa Paula Crimson Truck Rack	210 N. 12 th Street, Santa Paula CA 93060 Lat: 34°21'29.03"N Long: 119°03'26.66"W	Hollister Ave. (west of US 101/Winchester Cyn Road interchange, Exit 110) State Route 126 to the 10 th Street exit N. 10 th Street E. Harvard Ave. N. 12 th Street Alternate route: State Route 126 to Hallock Drive Hallock Drive E. Telegraph Road E. Main Street N. 12 th Street

2.5 Truck Off-Loading Operations

The following sections describe the planned off-loading destinations.

2.5.1 Santa Maria Pump Station

Deliveries to the Santa Maria Pump Station will use the facility's existing truck off-loading equipment. Venoco is coordinating with Phillips 66 to ensure that these facilities are adequate to accommodate the planned deliveries in terms of physical equipment and in terms of the facility's land use and air quality permits. At this time no permit constraints are anticipated.

2.5.2 Santa Paula Crimson Truck Rack

Deliveries to the Santa Paula Crimson Truck Rack will use the facility's existing truck off-loading equipment which includes a 55,000 barrel capacity floating roof crude oil tank, oil unloading facility, and associated unloading connections and spill containment. Phillips 66 has confirmed to Venoco that the facility can accommodate the planned deliveries. Venoco is continuing to coordinate with this facility to ensure that the facilities are adequate to accommodate the planned deliveries in terms of physical equipment and in terms of the facility's land use and air quality permits. At this time no permit constraints are anticipated.

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2.6 Truck Specifications

Crude transportation trucks and drivers will be Department of Transportation (DOT)-certified for safe transportation of crude oil in accordance with applicable regulations (e.g., 49 CFR 180.407 Requirements for test and inspection of specification cargo tanks). For emissions control, trucks will be compliant with Santa Barbara County APCD Rule 346, Loading of Organic Liquid Cargo Vessels. This rule requires various design features and operational procedures, including:

- Bottom-loading with a vapor control system that is compatible with the loading facility and certified by the California Highway Patrol
- Pressure vacuum release device set at the maximum safe pressure and vacuum ratings
- Primary and secondary overfill protection system with automatic flow shutoff
- Loading connector/adaptor that is compatible with the loading facility
- Inspections, repair, reporting and recordkeeping for fugitive emissions

Trucks will be equipped with particulate filters and other controls that meet or exceed 2011 model year emission control standards as specified in the California Air Resources Board's (CARB) On-Road Heavy-Duty Diesel Vehicles (In-Use) Regulation.

2.7 Air Pollution Control Systems and Emission Estimates

The EOF truck loading equipment will incorporate appropriate controls to minimize the emissions from crude loading operations. Displaced truck vapors will be processed through the vapor recovery system, and other fugitive emission controls will be in place, including incorporation of the current Fugitive Inspection and Maintenance program. Minor adjustments will be made to facility operations to ensure adequate controls are continuously in place during temporary crude oil truck loading operations.

As noted above, trucks will be equipped with recent model engines and appropriate emission-reduction components and operational procedures for crude handling, including bottom-loading with a vapor control system; pressure vacuum release device; primary and secondary overfill protection system with automatic flow shutoff; compatible loading connector/adaptor; and inspections, repair, reporting and recordkeeping for fugitive emissions.

Stationary emissions were estimated based on truck loading and fugitive emission sources at EOF. Truck offloading emissions were also estimated based on typical offloading equipment, storage tanks, and vapor recovery equipment. Mobile emissions were estimated based on a model year 2011 oil tanker truck emission factors from the CARB EMFAC2014 database. Estimated emissions are presented in Table 2.

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The project was evaluated for overall stationary and mobile source air emissions, and emissions were compared to applicable thresholds used by the City of Goleta. The applicable significance thresholds for criteria pollutants and greenhouse gases (GHG) include:

- Nitrogen oxide (NO_x): 25 lbs/day on a mobile basis; 55 lbs/day combined mobile plus stationary
- Reactive organic compounds (ROC): 25 lbs/day on a mobile basis, 55 lbs/day combined mobile plus stationary
- Carbon monoxide (CO): 150 lbs/day for stationary sources
- Particulate matter less than 10 microns (PM₁₀): 80 lbs/day for stationary sources
- GHG: 10,000 metric tons of carbon dioxide equivalent per year (MTCO₂e/YR)

The emissions estimates provided in Table 2 provide several examples of the potential truck loading and truck transportation emissions based on the identified potential transportation routes and the assumption that trips will be split into southbound and northbound directions. A worst-case scenario is presented, assuming half of the trips travel north to the Santa Maria Pump Station and half of the trips travel south to the Santa Paula Crimson Tank Rack. In all cases, the estimated emissions of criteria pollutants are well below the significance thresholds.

The source of GHG emissions is primarily from truck engine combustion emissions. These emissions are based on a specific number of truck loadings (34 trucks over 17 days) and truck travel distances (i.e., 62 miles each way to and from Santa Maria Pump Station and 57 miles each way to and from Santa Paula Crimson Tank Rack).

If actual project related operations and emissions differ from this example, then available mitigations will be adjusted to ensure all environmental impacts remain less than significant.

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Table 2 Emissions Summary

	ROC Emissions			NO _x Emissions			CO Emissions			PM ₁₀ Emissions			PM _{2.5} Emissions			GHG ⁵
Stationary Source¹	lb/day	tpq	tpy	lb/day	tpq	tpy	lb/day	tpq	tpy	lb/day	tpq	tpy	lb/day	tpq	tpy	MTCO₂e/Yr
Truck Loading and Fugitives	1.37	0.01	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-
Offloading	1.37	0.01	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-
Sub-Total Stationary Sources	2.73	0.02	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-
Thresholds of Significance ²	55.00	-	10.00	55.00	-	10.00	150.00	-	25.00	80.00	-	15.00	-	-	-	10,000.00
Mobile Source³	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
To/From SM Pump Station	0.01	0.00	0.00	0.64	0.01	0.01	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.21
To/From Santa Paula Crimson Truck Rack	0.01	0.00	0.00	0.59	0.01	0.01	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.95
Thresholds of Significance ²	25.00	-	-	25.00	-	-	-	-	-	-	-	-	-	-	-	10,000.00
Project Totals (Stationary and Mobile)⁴	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SM Pump Station	1.38	0.02	0.01	0.64	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.89
Santa Paula Crimson Truck Rack	1.38	0.02	0.01	0.59	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.73
Total SM Pump Station and Santa Paula Crimson Truck Rack	2.75	0.05	0.05	1.23	0.01	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.16
Thresholds of Significance ²	55.00	-	-	55.00	-	-	150.00	-	-	80.00	-	-	-	-	-	10,000.00

- Notes:**
- 1 Stationary emissions were calculated based on up to 2 trucks loaded per day.
 - 2 The thresholds of significance are based on the City of Goleta CEQA Thresholds Manual.
 - 3 Mobile emissions were calculated based on 1 truck roundtrip per day to and from each location for 17 days.
 - 4 Project totals include stationary and mobile emissions for 1 truck per day to and from each location for 17 days.
 - 5 GHG emissions were estimated based on a project duration of 17 days.

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2.8 Traffic Setting

Caltrans data were reviewed in order to understand the existing traffic volumes on the highway segments that would be used for crude oil transportation between EOF and the off-loading facilities. These data are summarized below and presented in Table 3.

Table 3 Highway Segment Volume Data

EOF to Santa Maria Pump Station						
		AADT	Truck AADT	5+ Axle Trucks	5+ Axle Truck %	Notes
Mainline	US 101 (Hollister Rd to E. Betteravia Rd)	33,523	3,564	1,908	5.7%	Actual limits of data set: Hollister to Broadway
Ramps	US 101 NB On Ramp from Cathedral Oaks/Hollister	1,412				
	US 101 SB Off Ramp to Cathedral Oaks/Hollister	1,014				
	US 101 NB Off Ramp to Betteravia	4,080				
	US 101 SB On Ramp from Betteravia	3,520				
EOF to Santa Paula Crimson Truck Rack						
		AADT	Truck AADT	5+ Axle Trucks	5+ Axle Truck %	Notes
Mainline	US 101 (Hollister Rd to Rte 126)	79,638	4,731	2,143	2.7%	Actual limits of data set: Rte 101 to Rte 23 (A St in Fillmore)
	Rte 126 (Rte 101 to Hallock Dr)	36,563	2,519	1,444	4%	
Ramps	US 101 SB On Ramp from Hollister	3,020				
	US 101 NB Off Ramp to Hollister	3,135				
	US 101 SB Off Ramp to Rte 126	16,001				
	US 101 NB On Ramp from Rte 126	15,101				
	Rte 126 EB Off Ramp to 10th St	5,300				
	Rte 126 WB On Ramp from 10th St	5,900				
	Rte 126 EB to Hallock Dr (Alternate route)	N/A				
	Rte 126 WB from Hallock Dr	N/A				

Notes:

1. AADT = Annual Average Daily Traffic
2. Mainline and ramp volumes were taken from Caltrans traffic census data: <http://traffic-counts.dot.ca.gov/>
3. Mainline volumes were taken from 2013 Truck data sheet.
4. Ramp volumes range from 2011 to 2013.

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2.8.1 EOF to Santa Maria Pump Station

An average of 33,523 vehicles per day travel on US 101 between the EOF and Santa Maria. Of this amount, 3,564 vehicles are trucks, and 1,908 of these trucks (about 5.7% of the total AADT) have 5 or more axles (Caltrans, 2013). The estimated additional 1 to 2 crude oil truck trips per day from the EOF to the Santa Maria Pump Station would result in a negligible increase in the existing overall daily traffic volume on this highway segment. Proposed use of the Hollister Avenue segment and the US 101/Hollister Ave. interchange represents no substantive change in the volume of traffic associated with EOF normal operations, which varies dependent on facility activity level.

2.8.2 EOF to Santa Paula Crimson Truck Rack

An average of 79,638 vehicles per day travel on US 101 between the EOF and State Route 126 interchange. Of this amount, 4,731 vehicles are trucks, and 2,143 of these trucks (about 2.7% of the total AADT) have 5 or more axles (Caltrans, 2013).

An average of 36,563 vehicles per day travel on State Route 126 between the US 101/ State Route 126 interchange and State Route 126/10th Street exit (or the alternate exit via the Route 126/Hallock Drive intersection) in Santa Paula. Of this amount, 2,519 vehicles are trucks, and 1,444 of these trucks (about 4% of the total AADT) have 5 or more axles (Caltrans, 2013).

The estimated additional 1 to 2 crude oil truck trips per day from the EOF to the Santa Paula Truck Rack on these highway segments and interchanges would result in a negligible increase in the existing overall daily traffic volume on this highway segment.

2.9 Transportation Risk

The City of Goleta has adopted public safety risk thresholds that are generally the same as the County of Santa Barbara's adopted thresholds. Public safety risk assessment studies have been performed for various proposed energy projects in Santa Barbara County that entail truck transportation of crude oil, NGL or other hazardous materials. Certain risk assessment studies are described below for projects that have similar characteristics to Venoco's proposed project. These assessments utilized statistical data from several studies related to truck transportation risk, including those prepared by the National Highway Transportation Safety Board (NHTSB), the DOT, the California Highway Patrol, studies published in the Journal of Loss Prevention and the Journal of Transportation Engineering, as well as European studies published in the Journal of Hazardous Materials. These data illustrate the very low probability of a truck-related accident resulting in a spill, or spill that ignites into a pool fire from various hazardous materials. The data have been used to quantify the reliability of MC 331 tanker trucks used to transport NGL and single compartment DOT 407 tanker trucks carrying bulk liquids, including crude oil. The risk assessments then applied the probability data and modeled the potential consequences of an

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accident in order to quantify the overall public safety risks. These risk levels were then compared to the adopted thresholds of significance.

A study conducted by Marine Research Specialists (MRS) for Santa Barbara County (2004) on NGL transportation obtained data from Caltrans on major highways in southern California and in the central San Joaquin Valley (i.e., Highways 101, 5, 405 and 166). The study examined collisions for a 10-year period from 1991 to 2001, and collected data on 13,300 collisions associated with over 18.6 billion truck miles. The accident rate for all trucks along all routes examined was estimated to be 0.72 accidents per million miles. Review of the 1990 LPG/NGL study by ADL and other associated studies show it is reasonable to assume a higher accident frequency per mile for undivided highways. For example, a base accident rate of 2.1 accidents per million miles has been used for undivided highway segments, and this rate could apply to undivided highways on certain route segments, such as E. Betteravia Road and other rural roads near the Santa Maria Pump Station. These accident rates are conservative because they take into account all accidents and do not focus only on accidents that resulted in a crude oil spill.

The Initial Quantitative Risk Assessment (QRA) of the ERG Operating Company's (ERG) Foxen Petroleum Pipeline Project (2013) assessed the potential public safety risks associated with the current (3,000 barrels per day) and future interim (9,900 barrels per day) transportation of crude oil by truck. The only direct hazard to public safety posed by truck transport of crude oil was determined to be dependent on the frequency and consequences of a crude oil pool fire. There would be a tangible public safety risk to an individual only if that individual happens to be within the pool fire hazard distance. In general, heavier crude oil impacts are limited to spills and subsequent risk and environmental impacts.

The ERG project QRA found that public safety impacts could occur due to a crude oil fire and subsequent thermal radiation. Typical thermal radiation modeling from a crude spill from a truck loaded with 160 barrels of crude oil indicate that impact distances to fatalities would be limited to about 65 feet and injuries to about 200 feet. This does not include the effects of thermal shielding, such as would occur if persons are located within automobiles or within residences.

The Final Environmental Impact Report (FEIR) for the Southern California Gas Company La Goleta Storage Field Enhancement (2013) evaluated truck transport of NGLs between the La Goleta Storage Facility (located near Goleta Beach) and Oxnard in Ventura County. The risk analysis determined the potential accident rates and spill probabilities associated with increased trucking of NGL transport over baseline conditions. The study found that the potential impacts resulting from the transport of gas condensates would be considered less than significant based on the County's risk criteria, and thus impacts were considered less than significant.

Venoco's proposed crude oil transportation from EOF would use some of the same road segments as were studied in the La Goleta project, but with a higher trip frequency. Nonetheless,

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transport of crude oil presents a lower overall risk than from NGL transportation (on a per barrel spilled basis) because, (1) NGL/LPGs have greater chance of spreading/vaporizing from the spill site; and (2) the vapor cloud explosion consequence (distance to lethality from the accident) is far greater for NGL/LPG.

A review of the above studies confirms the overall low potential for public safety risks associated with Venoco's proposed temporary crude oil trucking in the project region.

Based on these recent studies it is reasonable to conclude that the overall risk of serious injuries or fatalities from the temporary use of 2 crude oil trucks per day from EOF to and from the planned off-loading destinations will be well within the acceptable range of the City of Goleta's significance thresholds.

2.10 EOF Compliance Plans

Operational and contingency plans that are in place at the EOF will be utilized during temporary trucking operations. The relevant plans already address ongoing truck operations, and are adequate to address potential accidents or spills during the proposed temporary crude oil truck operations. As appropriate, certain plans will be updated to more specifically incorporate the temporary crude oil loading operations. With respect to transportation planning, Venoco implements a set of standard procedures for trucks and other vehicles that access the EOF. Table 3 summarizes several of the EOF compliance plans and their relevance to the temporary trucking operation.

Table 3 Compliance Plans

Operations and Contingency Plan	Plan Description
Oil Spill Contingency Plan (OSCP)	The EOF OSCP addresses various spill scenarios including potential spills from ongoing truck loading operations.
Emergency Response Plan (ERP)	The EOF ERP addresses various accident scenarios including potential spills within the EOF and corresponding response procedures.
Spill Contingency and Countermeasure Plan (SPCC)	The EOF SPCC indicates existing facilities (inclusive of truck operations), containment structures and spill response measures. Potential spills related to the trucking operation would occur on paved surfaces that drain to a sump and disposal systems that is designed for the overall EOF operations.
Fire Protection Plan (FPP)	<p>The EOF FPP addresses various fire/accident scenarios within the EOF and corresponding fire/emergency response procedures. Onsite fire suppression is adequate to address a truck-related incident.</p> <p>The project will comply with NFPA 30 which regulates the loading of flammable liquids, and UFC Article 79 which addresses procedures for loading oil.</p>
Santa Barbara County Fire Department Operational Permit	The EOF Fire Department Operational Permit will remain in effect. This permit is required for loading of flammable liquids and to otherwise install, construct, alter or operate equipment, tanks, plants, terminals,

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Operations and Contingency Plan	Plan Description
	wells, and similar facilities where flammable and combustible liquids are produced, processed, transported, stored dispensed, or used. The permit applies to current NGL loading, and will apply to crude oil loading.
Safety Inspection Maintenance and Quality Assurance Program (SIMQAP)	The EOF SIMQAP addresses fixed, long-term facilities and processes, and is not applicable to temporary trucking.
Ellwood Liquids Transporter Safety Program for NGL/LPG transportation	The Ellwood Liquids Transporter Safety Program will remain in effect for transportation of NGL/LPG. This program does not apply to oil trucking.

2.11 Environmental Measures

Venoco will take prudent steps to mitigate potential impacts posed by the temporary trucking operations. Environmental protection measures will include, at a minimum:

- Restriction of all loading and off-loading activity to existing paved and contained areas within the secured fenced EOF and delivery point facilities.
- Installation of additional secondary containment if needed under the connection points to further prevent the spread of oil or fuels should an incident occur during operations.

With respect to air quality, Venoco will, at a minimum, mitigate new air emissions of criteria pollutants and GHGs to less than significant levels in compliance with City of Goleta Thresholds of Significance and APCD rules. Such mitigation may consist of, but will not be limited to:

- All trucks and loading equipment will be connected to a vapor recovery system.
- Trucks will be equipped with particulate filters and other controls that meet or exceed 2011 model year emission control standards.
- Optimum routes will be taken to the extent feasible, to reduce vehicle miles travelled and mobile emissions.
- Total air emissions and associated mitigation measures will be quantified and reported on a monthly basis throughout the temporary trucking operation.

With respect to public safety, Venoco will, at a minimum:

- Maintain secure gated access to the trucking facility to prevent members of the public from accessing the loading areas.
- Maintain operational fire prevention and response equipment at the loading facility at all times.
- Implement Venoco's standard operating procedures for truck transportation for all trucking activity.
- Have a trained and qualified operator onsite, as well as the truck driver.

Venoco, Inc. Temporary Crude Oil Trucking Project
Project Description

With respect to facility noise, proposed truck loading activities will not substantively contribute to the facility's typical industrial noise levels, and fenceline noise levels will not be exceeded. Activity will be consistent with the approved EOF Noise Monitoring and Control Program. This program has various measures to reduce overall facility noise levels due to significant project construction and routine operational activity. Measures include noise monitoring and reporting, as well as a complaint reporting and resolution process.

3.0 REFERENCES

- California Department of Transportation (Caltrans). 1986. Transportation of Hazardous Materials in California by Highway and Rail. Report to the California Legislation. September 1986.
- Caltrans traffic count data, available online at: <http://traffic-counts.dot.ca.gov/>
- County of Santa Barbara. 2013. Final Environmental Impact Report for the Southern California Gas Company La Goleta Storage Field Enhancement. Prepared by the County of Santa Barbara Planning and Development Department. May 2013.
- County of Santa Barbara. 1993. Resolution of the Board of Supervisors of the County of Santa Barbara regarding transportation of NGL/LPG. September 1993.
- Harwood, *et al.* 1993. Procedure for Developing Truck Accident and Release Rates for Hazardous Material Routing. Journal of Transportation Engineering, Volume 119, No. 2, March/April 1993.
- Marine Research Specialists. 2004. Nuevo LPG Transportation Risk Assessment final Draft Report. Ventura, CA. March 2004.
- SRS Tracer Environmental. Initial Quantitative Risk Assessment of the ERG Foxen Petroleum Pipeline Project. June 2013.

**Venoco, Inc. Temporary Crude Oil Trucking Project
Project Description**

ATTACHMENTS

Facility Drawings

- EOF Site Plan and Truck Loading Location (Drawing F-9769)
- EOF Mechanical Flow Diagrams (Drawings F-9760-3, F-9760-7, and F-104)

EOF Crude Oil Loading site photographs

EOF Crude Oil Loading Procedure

EOF SIMQAP Tables 1 and 2

Smart pig procedures

Management of Change documentation

Truck Routing Maps

- Figure 1. EOF to Santa Maria Pump Station
- Figure 2. EOF to Santa Paula Crimson Truck Rack

Other Land Use Application Documents

- EOF Property Quitclaim Deed
- Assessor Parcel Map
- Mailing List Noticing Map
- Noticing Mailing List

No. _____

**SAFETY INSPECTION, MAINTENANCE, AND
QUALITY ASSURANCE PROGRAM**



VENOCO, INC / ELLWOOD PIPELINE, INC

ELLWOOD ONSHORE FACILITY / LINE 96

7979 Hollister Ave.

Goleta, CA 93117

**PREPARED FOR
Santa Barbara County
System Safety and Reliability Review Committee and the City of Goleta**

**Revision 6
March / 2012**

Safety, Inspection, Maintenance and Quality Assurance Plan

6.0 PROCESS SAFETY AND POLLUTION CONTROL REQUIREMENTS

6.1 PRESSURE VESSELS

Pressure vessels shall be designed, fabricated, stamped, and maintained in accordance with specific sections of the ASME Boiler and Pressure Vessel Code as listed below. The governing edition shall be the edition in effect when the vessel was fabricated or modified. The pressure vessels (including code exchangers, filters, etc.) within the VENOCO facility are inspected as noted in Table 1, by a company or contract inspector qualified by training and experience. The purpose of these inspections is two fold:

- To ensure that all vessels are capable of safely continuing to perform as designed.
- To ensure compliance with the State of California Safety Orders

The vessel inspections frequency schedule has been set for each vessel based on Risk Based Inspection Criteria established by API 510 which consider the service conditions (pressure, temperature, process, etc.), remaining available corrosion allowance, potential for future corrosion, and previous inspections of that vessel and other equipment in similar service. The frequency is adjusted when conditions change or when inspection of that vessel, or other equipment in similar service, indicates a change in corrosion rate.

The table below lists the specific regulations that apply to various categories of pressured equipment and the inspection frequency for each type of vessel.

TABLE 1

Equipment	Regulation	Inspection Frequency	Notes
Fired Pressure Vessels – Sour Service	Title 8, Chapter 4, Subchapter 2, Boiler and Fired Pressure Vessel Safety Orders, Article 5; Title 8, Section 6857	2 to 5 years for Internal & External Inspection	1,2,3
Unfired Pressure Vessels	Title 8, Chapter 4, Subchapter 1, Unfired Pressure Vessel Orders, API 510; Title 8, Section 6857	10 years for Internal & 5 years for External Inspection	1,2,3
Unfired Pressure Vessels – Sour Service	Title 8, Chapter 4, Subchapter 1, Unfired Pressure Vessel Orders, API 510; Title 8, Section 6857	2 to 5 years for Internal & External Inspection	1,2,3
Air Tanks	Title 8, Chapter 4, Subchapter 1, Unfired Pressure Vessel Orders,	5 years	2,3

Safety, Inspection, Maintenance and Quality Assurance Plan

	Article 3.		
--	------------	--	--

- 1) Interval is based on service and operating experience.
- 2) All of these Safety Orders require, in substance, that:
 - The safe working pressure of a vessel be established in accordance with applicable codes.
 - Vessel is equipped with properly operating Safety or Relief Valves.
 - Files of pertinent records are maintained.
 - Permanent and progressive records of safety devices be maintained.
- 3) The ranges of frequencies are generic guidelines for the inspection frequencies of different classes of vessels. Facility Engineering maintains a vessel inspection frequency log that is specific for each vessel.

The periodic pressure vessel inspection will determine if an adjustment of assigned maximum allowable working pressure is necessary. This will be based on:

- Corrosion or erosion of metal surfaces.
- Vessel has undergone changes or has features of construction which require maximum allowable working pressure to be reduced.
- Vessel has features of construction or defects which are not permitted by the applicable code, such that repairs are required before any rating can be assigned.

All pressure or fired vessels used in the processing of oil or gas shall conform to the requirements stipulated in the edition of the ASME Boiler and Pressure Vessel Code, Sections I, IV, and VIII, as appropriate, in effect at the time the vessel was fabricated or modified. Each vessel shall be hydrostatically tested at a pressure 1.5 times its maximum working pressure prior to being placed in service. The test date, test pressure, and working pressure shall be marked on the vessel in a prominent place. If available, a record of the test shall be maintained by VENOCO at their facility.

In accordance with VENOCO's vessel inspection plan, VENOCO uses Pressure Vessel Inspectors, certified by the State of California. These inspectors will inspect equipment that fall under the jurisdiction of the ANSI/ASME Boiler and Pressure Code. Testing and maintenance of pressure vessels shall be performed by trained VENOCO personnel or VENOCO approved contractors. Pressure vessel repair shall be performed by VENOCO approved contractors that have a current ASME B&PV qualification for pressure vessel repair. Non-destructive testing shall also be managed by qualified individuals.

6.2 ATMOSPHERIC STORAGE TANKS

The EOF has several atmospheric storage tanks for oil processing and storage. VENOCO shall maintain these tanks in accordance with API RP 653, Tank Inspection, Repair, Alteration and Reconstruction.

6.3 PRESSURE SAFETY SYSTEMS

A pressure relief system or an adequate vent is installed on all process systems that will prevent over-pressurization. The set pressure of the pressure-relief system shall be determined by VENOCO. The discharge of the relief valves are routed either to a

Safety, Inspection, Maintenance and Quality Assurance Plan

The pipeline is also protected from external corrosion by an impressed current CP system from the EOF and four rectifiers along the pipeline route.

6.11 SAFETY DEVICE TESTING

The safety system devices which are referenced in this Plan shall be tested by VENOCO at the interval specified below or more frequently if operating conditions warrant as determined by VENOCO or the SSRRC or if required by law. In no case shall the inspection, testing or calibration interval recommended by the manufacturer of the specific device be exceeded.

Safety, Inspection, Maintenance and Quality Assurance Plan

TABLE 2

DEVICE DESCRIPTION	INSPECTION FREQUENCY	NOTES
Combustible Gas Detectors	1 /month	1
H2S Detectors	1 /month	1, 6
Emergency Shutdown Valves (ESD)	2 /year	2
Level Sensors High (LSH)	4 /year	4
Low (LSL)	4 /year	4
High/Low (LSHL)	4 /year	4
Pressure Sensors High (PSH)	4 /year	4
Low (PSL)	4 /year	4
High/Low (PSHL)	4 /year	4
Flow Controls	4 /year	4
Relief Valves (PSV)	1 /year	5
V-241 Propane Tank PSVs	Every 5 years	8
Shutdown Valves (SDV)	2 /year	2
Temperature Sensors High (TSH)	4 /year	4
Low (TSL)	4 /year	4
High/Low (TSHL)	4 /year	4
Electrical Protective Relays	Triennial	7
Electrical Interlocks	Triennial	7
Facility Cathodic Protection (CP) System		
Ground Bed Potential Measurements	1 /year	5
Rectifier Output	1/month	1
Valve Actuators on: Safety Shutdown Valves, Blowdown Valves, and Emergency Shutdown Valves	2 /year	2
Breathing Apparatus (SCBA)	1 /month	1
Eye Wash Stations	1 /month	1
UV Fire Detectors	1 /month	1
Smoke Detectors	2 /year	2
Fire Pump Operation	1 /week	
Fire Pump Performance Test	1 /year	5
Fire Extinguishers	1 /month	1, 3
Fire Water Monitors	2 /year	2
Fire Water Deluge System	2 /year	2
Fire Hose, functional test	1 /month	1
Fire Hose, full flow and pressure test	1 /year	5
Foam System	1 /year	5
Fire Water Tank UT Testing	1 /year	5
Fire Water Tank Flushing	1 /year	5

Safety, Inspection, Maintenance and Quality Assurance Plan

Electronic Internal Survey, Oil & Gas Pipelines from Holly	1 /year	5
Ellwood Emergency Siren	4/year	4
Electronic Internal Survey, Line 96 Pipeline	1/5 years	8
Ellwood 4" Utility Pipeline Hydrotest	1/ year	5
Oil & Gas Pipelines CP Rectifier Inspection	4/ year	4
Oil & Gas Pipelines CP Annual Survey	1/ year	5
Ext. ROV Insp., Oil & Gas Pipelines between EOF and Holly	1 /year	5

- 1) At no time shall more than six (6) weeks elapse between tests.
- 2) At no time shall more than seven (7) months elapse between tests.
- 3) Certified Annually
- 4) At no time shall more than fifteen (15) weeks elapse between tests.
- 5) At no time shall more than fourteen (14) months elapse between tests.
- 6) Replacement of H₂S sensor element per manufacturer's instructions.
- 7) At no time shall more than thirty nine (39) months elapse between tests.
- 8) At no time shall more than sixty three (63) months elapse between tests.

NOTE: Additional regulatory pipeline maintenance and inspection requirements are found in the Venoco Ellwood Gas and Hazardous Liquid Pipeline Operating & Maintenance Procedures manuals (see Section 8.0).

6.11.1 RECORDS

VENOCO has established a records retention policy for the maintenance, installation, inspection and test records for a minimum period of five years for each safety device installed. Records of facility equipment design, specifications, construction, etc. shall be maintained at the facility. These records are available for review by authorized representatives of the Santa Barbara County SSRRC and the City of Goleta. The records shall show the present status and history of each device, including dates and details of installation, inspection, testing, repairing, adjustments, and reinstallation.

6.12 RELIABILITY BASED INSPECTION AND MAINTENANCE SYSTEM**6.12.1 POLICY**

VENOCO has a policy and program of inspection, maintenance, and failure analysis of facility safety and pollution prevention devices in which the inspection and maintenance schedule for these devices will be modified as a direct result of prior inspection results and maintenance actions. That is, if a particular safety or pollution prevention device, or class or group of devices is found, in the regular maintenance and inspection program to be defective, failure prone, or otherwise improperly operating, VENOCO shall take four actions. First, the device failure shall be noted in the records. Second, a detailed examination of the device or devices shall be undertaken. This examination shall attempt to determine if the problem with the device was due to improper design, poor workmanship or materials, operating conditions outside the design envelope, operating procedures, wear, or random failure. Third, if the problem with the safety or pollution

Oil Line Smart Pig Procedure

Date: 7/15/15

1. Notify Ellwood operations and prepare Oil line for Oil pig launching. EOF ops will line up 6" oil line receiver normally to take fluid to Heater Treaters HT-201/203. Water will go to Tk-201 Waste Water Tank to be injected via WD-1 water injection well and Oil will go to TK-202/203/204.
2. Using fire water from P-150A & P150B at Plt. Holly load and launch a scrapper pig in the oil line.
3. Once the scrapper pig arrives at Ellwood, pull and inspect the condition of pig. If clean move on to the next step.
4. If the pig is unacceptable, repeat #2 and #3 until the pig is clean at the end of the last run.
5. The Smart Pig run will be conducted using a 6" (152mm) MFL+DEF tool using fire water to push the tool no greater than 10 ft./s. EOF can control speed of pig by throttling 2" return valve on oil line receiver.
6. Before Smart pig launch add 10 gallons of CRW-97 to Oil line. This will pickle the pipeline in the event that the run is good.
7. Once the smart pig is received at EOF wait for run results from the Smart Pig vendor and repeat step #6 as needed.
8. Once the run is deemed good. Install new 6" Poly Pig into oil line and add the designated amount of biocide and corrosion inhibitor chemical into launcher, and place a second 6" Poly pig into the launcher.
9. Connect Casing gas to launcher and start out with 200 psi to launch poly pigs down the 6" oil line to displace the sea water to EOF.
10. Once EOF has received the 2-poly pigs, shutdown and disconnect Casing gas and depressure the oil line.
11. Remove Smart Pig launcher.

Note:

1. 4" Utility Line will be de-pressured and all Annulus gas will be directed through the 4" to EOF to the Iron sponge during the Smart Pig of the Oil and Gas Line.
2. Flare system on Holly will use Propane for the purge and pilot for the duration of the Smart Pig projects.

Gas Line Smart Pig Procedure

Date: 7.15.15

1. Notify Ellwood operations and prepare Gas line for Gas pig launching. EOF ops will jumper gas line pig receiver to oil line pig receiver at EOF using 2" hard piped line and take flow to Heater Theaters. Water will go to TK-201 to be injected.
2. Using fire water from P-150A & P-150B at Plt. Holly, load and launch a scrapper pig in the gas line.
3. Once the scrapper pig arrives at Ellwood, pull and inspect the condition of the pig. If clean move on to the next step.
4. If the pig is unacceptable, repeat #2 and #3 until the pig is clean at the end of the last run.
5. The Smart Pig run will be conducted using a 6" (152mm) MFL+DEF tool using fire water to push the tool no greater than 10 ft./s. EOF can control speed of pig by throttling 2" return valve on oil line receiver at EOF.
6. Before Smart Pig launch add 10 gallons of CRW-97 to Gas pipeline. This will pickle the pipeline in the event that the run is good.
7. Once the Smart Pig is received at EOF wait for run results from smart pig vendor and repeat step #6 as needed.
8. Once the run is deemed good. Install new 6" Poly Pig into Gas pipeline and add the designated amount of biocide and corrosion inhibitor chemical into launcher at Plt Holly, and place a second 6" Poly pig into the launcher.
9. Connect Casing gas to launcher at Plt. Holly and start out with 200 psi to launch poly pigs down the 6" oil line to displace the sea water to EOF.
10. Once EOF has received the 2-poly pigs shutdown and disconnect Casing gas, and depressurize the gas pipeline.
11. Remove Smart Pig launcher.
12. Now remove annulus gas from the 4" Utility Line at EOF and return to normal the 6" gas line for EOF to take gas to the Iron Sponge.
13. Have EOF put back to service the 4" Utility Line with In-plant gas (buyback) and start sweeping the sour gas out of the Holly flare line.
14. Have Holly Operators continue to sample gas from the 4" Utility line until acceptable

(0 H₂S) for the flare system.

Note:

1. 4" Utility Line will be de-pressured and all Plt. Holly Annulus gas will be directed through the 4" to EOF to the Iron sponge during the Smart Pig of the Oil and Gas Line.
2. Flare system on Plt. Holly will use Propane for the flare purge and pilot for the duration of the Smart Pig projects.

COMMERCIAL TANK TRANSPORTS
160 TO 216 BBL CAPACITY
W/ SPILL CONTAINMENT
570 BPH MAX.



CONFIDENTIAL
This drawing is based on licensed information & is not to be used other than in the operation & maintenance of the plant for which it was prepared. This drawing is the sole property of Venoco Inc.

PIPING & INSTRUMENT DIAGRAM
TEMPORARY TRUCK LOADING CONNECTION
LINE 96

ELLWOOD PIPELINE
INC.
6267 Carpinteria Ave. Suite 100, Carpinteria CA. 93013

0	6/1/15	LOADING CONNECTION PROJECT	ACS	GR
Mark	Date	Revision	By	App'd

ENGINEERING RECORD									
<div></div>	INIT.	DATE	<div></div>	INIT.	DATE	Drawn By	ACS	Date	6/1/15
DRAWN	ACS	6/1/15	ENGINEER	GR	6/1/15	Revised	—	Scale	NONE
ELEC.			CONST.			Project Engr.	—	Dwg. No.	F-104
PROJECT ENGINEER			OPERAT'NS						

0

VENOCO, INC.

Management of Change

Date: 7/29/2015

MOC #: EOSF-15-158

Project Description: Temporary Crude Oil Trucking Project

ATTENDANCE


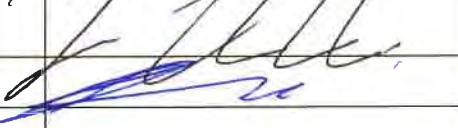

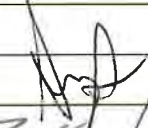
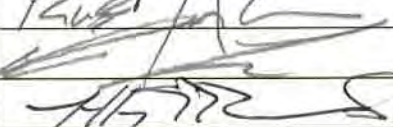
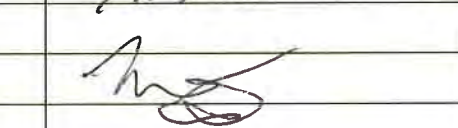
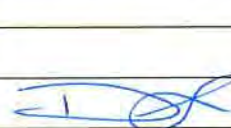
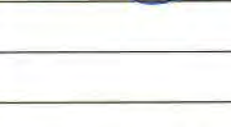
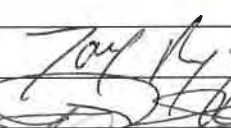

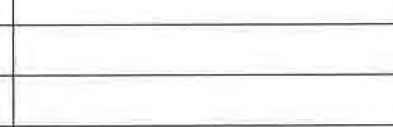

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EOF IMPACTED EMPLOYEE MOC SIGN-OFF

DATE: 07/29/2015

MOC #: EOSF-15-158

CHANGE DESCRIPTION: Temporary Crude Oil Trucking Project

Name	Company	Signature	Date
Bautista, Josh	Venoco		7/29/15
Chamberlain, Lance	Venoco		7-30-15
Davis, Bert	Venoco		8-5-15
Diaz, Jesse	Venoco		
Dimizio, John	Venoco		
Dixon, Don	Venoco		
Gushwa, Aaron	Venoco		8/4/15
Hunt, Sy	Venoco		8-4-15
Iribarren, Russ	Venoco		7-30-15
Lomeli, Rosendo	Venoco		7/29/15
MacDonald, Jeff	Venoco		7-29-15
Marroquin, Ray	Venoco		
Marroquin, Mike	Venoco		7-29-15
Monroy, Jesus	Venoco		
Montoya, Frank	Venoco		
Neri, Danny	Venoco		7/29/15
Nielsen, Tom	Venoco		
Pettitt, Aaron	Venoco		
Pina, Knowland	Venoco		
Ruggerio, Tony	Venoco		7-29-15
Salazar, Joey	Venoco		8-4-15
Tripp, Joey	Venoco		8-4-15
Van Schoyck, Bert	Venoco		



EXPERIENCED BASED HAZARD ASSESSMENT

MOC # **EOSF-15-158**

DATE: **07/29/2015**

Rev#

DESCRIPTION OF CHANGE: **Temporary Crude Oil Trucking Project**

Temporary Change: Yes ☐ No ☒

DURATION OF TEMPORARY CHANGE:

ASSESSMENT TEAM MEMBERS:

Team Leader: Jeff McDonald, Bob Vassilios

George Ramsey, Josh Bautista

OPERATIONAL HAZARDS: 1. Verify Proper LACT Ticket. 2. Verify LACT Counter Set. 3. Verify Hose Rating: Size for Load & Vapors.

MAINTENANCE HAZARD (IMPACTED CRAFTS): NONE

PROCESS / HAZARD: SEE ABOVE OPERATIONAL HAZARDS.

EQUIPMENT HAZARD: SEE OPERATIONAL PROCEDURES ON PROPER CONNECTIONS.

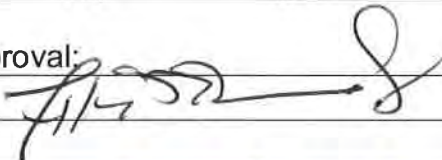

H.E.S. IMPACTS (AIR, WATER, WASTE, EMERGENCY RESPONSE, SAFETY):

NONE

Hazard Analysis Finding	Risk Rank	Required for Start-Up	Action/Assigned To:	Date Completed:
1. Verify Proper Lact Tickets		Y	Bob / Josh	7/30/15
2. CML PET ON LACT Counter set		Y	Bob / Josh	
3. Verify and Purchase Loading & Vapor Hoses		Y	Bob / Josh	
4.				
5.				
6.				
7.				
8.				
9.				
10.				

**** Items not "required for startup" must be completed within sixty days of startup.**

EBA Approval:

O.S.: 	Date: 7/29/15
O.S.:	Date:
Venoco Engineer: 	Date: 7/29/15
Asset Manager (if required):	Date:

Venoco Inc.
Management Of Change Program

INFORMATION UPDATE LIST						
(Items not required for startup, must be completed within 60 days of startup.)						
7/29/2015		MOC # EOSF-15-158		DESCRIPTION: Temporary Crude Oil Trucking Project		
No.	Information	Update Required	Required for Startup	Assigned	Date Completed	Comments
Safety Review						
1	Review / Update Venoco Safety Policies, Plans, & Procedures	N				
2	Review / Update Station Bills	N				
3	Review / Update Platform Evac Plan	N				
4	Update Emergency Exit Drawings	N				
5	Review / Update Sim-Op Plan	N				
6	Review / <u>Update</u> Operating Procedures	Y	Y	JEFF M.	7/29/15	
7	Review / Update Maintenance Procedures	N				
8	Update Temporary Change Log	N				
9	Update HazCom Program, MSDS list	N				
10	Update Chemical Inventory	N				
11	Review / Revise Chemical Location Drawings, Business Plans	N				
12	Revise PPE Inventory	N				
13	Update Fire Prevention Plan	N				
HazWaste Compliance Review						
14	Review / Revise Waste Management Plan	N				
15	Review / Update USCG Garbage & Pollution Plan	N				
16	Review / Revise Inj. Well Permits	N				

Venoco Inc.
Management Of Change Program

INFORMATION UPDATE LIST						
(Items not required for startup, must be completed within 60 days of startup.)						
7/29/2015		MOC # EOSF-15-158		DESCRIPTION: Temporary Crude Oil Trucking Project		
No.	Information	Update Required	Required for Startup	Assigned	Date Completed	Comments
Emergency Response Program						
17	Review / Revise Oil Spill Contingency or Emergency Response Plans	N				
18	Review OSPR Response Manual	N				
Air Regs Compliance Review						
19	Review / Revise APCD PTO (ATC)	N				
20	Review / Revise APCD Compliance Plans	N				
21	Update I&M Inventory	N				
22	Project De Minimus Calculations	N				
23	Update De Minimus Log	N				
Water Regs Compliance Review						
24	Review / Revise NPDES Permit / NPDES Compliance Guide	N				
25	Review / Revise NPDES Compliance Plan	N				
26	Review Spill Prevention Control & Countermeasure Plan (SPCC)	N				
27	Review Storm Water Pollution Prevention Plan (SWPP)	N				
DOT Compliance Review						
28	Review / Revise DOT Pipeline Operation & Maint. Manual	N				
Other E&S Compliance Issues						

Venoco Inc.
Management Of Change Program

INFORMATION UPDATE LIST						
(Items not required for startup, must be completed within 60 days of startup.)						
7/29/2015		MOC # EOSF-15-158		DESCRIPTION: Temporary Crude Oil Trucking Project		
No.	Information	Update Required	Required for Startup	Assigned	Date Completed	Comments
29	MMS DPP Modifications	N				
30	Revise / Verify Regulatory Agency Permits:	N				
31	Drilling Permit- MMS APD	N				
32	MMS Sundry Notice	N				
33	MMS Subsequent Sundry	N				
34	MMS Well Summary Rpt.	N				
35	MMS Plan of Operation	N				
36	MMS Project Approval	N				
37	California State Lands Commission Review / Permit	N				
38	County / City Land Use Permits	Y	Y	Bob V.		
39	DOGGR Approval	N				
Engineering / Operations Review						
40	List of Impacted P&IDs	Y	Y	Tony S.	7/29/15 Done	F-9760-3,7
41	Update Equipment Lists	N				
42	Update P&ID's PFD's / UFD's	Y	Y	Tony S.	7/29/15	F-9760-3,7
43	Update SAFE Chart(s) CAUSE EFFECT	Y	Y	Bob V.	7/29/15	
44	Update Relief System Design & PSV list	N				
45	Update Electrical One Line Drawings	N				

Venoco Inc.
Management Of Change Program

INFORMATION UPDATE LIST						
(Items not required for startup, must be completed within 60 days of startup.)						
7/29/2015		MOC # EOSF-15-158		DESCRIPTION: Temporary Crude Oil Trucking Project		
No.	Information	Update Required	Required for Startup	Assigned	Date Completed	Comments
46	Update Electrical and Wiring Diagrams	N				
47	Update PLC Logic	N				
48	Update Loop Diagrams	N				
49	Update Elec. Class. Dwgs.	N				
50	Update Equip Arrange. Dwgs.	N				
51	Update Fire/Gas Detect. Plan	N				
52	Update Structural Drawings	N				
53	Update Monthly Safeties	N				
54	Update Carseal Log	N				
55	Sales Contracts Update	N				

Venoco, Inc. Temporary Crude Oil Trucking Project Project Description

1. INTRODUCTION

Venoco's Ellwood crude oil production is normally shipped via Venoco's 6-inch diameter Line 96 which connects Venoco's Ellwood Onshore Facility (EOF) to the Plains All American Pipeline Line 901 (Plains pipeline). The point of connection is approximately 8.5 miles west of EOF. The Plains pipeline is currently inoperable in Santa Barbara County due to the May 19, 2015 spill incident near Refugio Beach State Park and associated ongoing repairs. Venoco's Platform Holly and Ellwood Onshore Facility have been shut down since May 21, 2015 as a result of the pipeline failure. The duration of the unavailability of the Plains pipeline is unknown.

Pending the return to service of the Plains pipeline, Venoco seeks an emergency permit from the City of Goleta to allow short-term trucking of crude oil (34 truckloads over 17 days) in order to enable time-sensitive inspections and maintenance, and thus ensure the safety, reliability and overall mechanical integrity of the onshore and offshore equipment, as described further below.

Venoco's preferred destinations include the Phillips 66 Santa Maria Pump Station on Battles Road in Santa Maria (at the former Battles Facility site) or the Crimson, LP (Crimson) Santa Paula Crimson Truck Rack in Santa Paula. Phillips 66 has confirmed the availability of these existing and fully permitted sites for the proposed deliveries.

1.1 Emergency Permit Applicability

The City of Goleta's Coastal Zoning Ordinance (CZO) Section 35-154(5)(i) provides development standards for onshore processing facilities necessary or related to offshore oil and gas development. Subsection 5(i)(4) sets forth conditions under which transportation by a mode other than pipeline may be permitted. Sub-parts 5(i)(4)(a) and 5(i)(4)(d) list specific findings related to pipeline unavailability that are directly applicable to Venoco's Ellwood operations (i.e., a pipeline to the shippers' refining center of choice is unavailable within a reasonable period of time, and an emergency [in this case, the Plains pipeline rupture and associated spill] has precluded use of a pipeline).

CZO Section 35-171 (Emergency Permits) sets forth the procedures for a permit application in the event of an emergency. This project description package provides the information necessary to support the City of Goleta's grant of a conditional temporary permit for the loading and trucking of oil from the EOF consistent with the applicable CZO standards noted above.

1.2 Emergency Permit Basis

Limited short-term crude oil trucking will allow for time-sensitive inspection and maintenance of onshore and offshore crude oil production equipment that is scheduled and required in accordance with regulations and permit conditions but that cannot currently be completed due to the facilities being at capacity and pipeline transportation being shutdown. Long term unplanned

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shutdowns can pose problems as process facility systems are designed to operate and flow. Consequently, long term static conditions absent proper planning and preparation could result in potential safety or environmental impacts. Accordingly, the following necessary inspection and maintenance activities proposed to occur require the processing and draining of oil and oil/water from certain facilities. These activities will ensure the continued safety, reliability and overall mechanical integrity of the onshore and offshore equipment during this shutdown period.

Shipping Tank T-203 Inspection. Recent external tank inspection has identified external corrosion features on shipping tank T-203 which requires further evaluation. In order to further evaluate these features Venoco needs to enter the tank to perform an internal tank inspection. Under normal circumstances the tank would be isolated and drained while under normal operations and prepared for inspection. Trucking is necessary to enable the tank to be emptied and prepared for inspection.

Vessel inspections. Internal inspections are due for two vessels on Platform Holly and two vessels at the EOF. These vessels currently hold approximately up to 1,500 barrels of oil and oil/water emulsion. The fluids in these vessels currently cannot be processed in the production system and drained due to the high volume of oil in shipping tanks T-202, 203 and 204.

Offshore emulsion pipeline protection. Following the emptying of the vessels on Platform Holly, the Platform Holly to shore emulsion pipeline must be similarly set in a static protective mode. This consists of evacuating the pipeline of all oil and water and setting the pipeline in natural gas with corrosion inhibitor to prevent internal pipeline corrosion for the period time the pipeline is not operating. Additionally, Venoco will run its annual smart pig of the emulsion pipeline earlier than normally planned; this inspection is planned for August 10, 2015.

The total estimated volume of stored crude oil to be removed from the facilities is 5,500 barrels. Following completion of this work the Platform and EOF will contain less hydrocarbons and hazardous materials in an idled state, thus reducing the long-term potential for upset conditions that could impact the public or the environment.

As discussed further in this application package, previous studies have demonstrated that the levels of risk associated with truck transportation of crude oil would be well below the City and County's adopted Public Safety Thresholds of significance for public risk. In particular, Venoco previously applied to the City of Goleta (case# 06-186-DP) for interim trucking of crude oil from the EOF. Although the project was not pursued, the project description included appropriate safety features and demonstrated that the proposed trucking operations would not result in a significant public safety risk or environmental impact. Other recent studies support this conclusion, such as the County of Santa Barbara's analysis of compressed natural gas and natural gas liquid (NGL) transportation associated with Southern California Gas Company's La Goleta

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Storage Field Enhancement Project (for information see Final EIR Section 4.9 Hazardous Materials/Risk of Upset, available online at:
<http://www.sbcountyplanning.org/energy/projects/SoCalGasStorage.asp>).

2. PROJECT DESCRIPTION

The following project information describes the temporary truck loading facility location, design, operations, truck routing, and other details. This package also discusses potential impacts associated with air quality, water quality, and public safety, as well as contingency actions and mitigations to address potential impacts.

2.1 Trucking Frequency and Permit Duration

An estimated 34 crude oil trucks over 17 days (an average of 2 trips per day) will be loaded from the EOF truck loading site based on a standard tanker truck capacity of 160 barrels and the total estimated stored crude oil volume of 5,500 barrels. Venoco will contract for a dedicated truck operator to complete two loops per day between EOF and the designated delivery locations during daylight hours.

For the period of time of the proposed oil trucking, gas processing at EOF will be isolated and made safe, and trucking of NGL and LPG will be suspended, thus reducing overall truck trips. Blending of NGLs with the crude oil will also be suspended during crude oil trucking operations.

2.2 EOF Current Operations

Crude oil loading would occur within the fenced and gated EOF. The EOF is located in western Goleta at 7979 Hollister Avenue on a 4.5-acre triangular-shaped parcel (APN 079-210-042) enclosed by chain-link fencing. Surrounding uses include Sandpiper Golf Course to the east, Bell Creek lagoon, the beach and Pacific Ocean to the south, open space and Bacara Resort and Spa to the west, and Hollister Avenue, Union Pacific Railroad and US 101 to the north.

The EOF is a manned facility with existing oil and gas treating operations (including receipt and dispatch of various trucks for typical industrial activities such as vacuum trucks, construction trucks, delivery trucks, and tanker trucks) occurring 24 hours per day 7 day per week, and with easy on/off access to the US 101 freeway. At least 4 operators are always on duty. The EOF has the capability to treat 20,000 barrels per day (BPD) of wet oil and 20,000 thousand standard cubic feet per day (MSCFD) of gas produced from offshore Platform Holly. Currently, Santa Barbara County Air Pollution Control District (APCD) Permit 7904-R7 limits throughput at the EOF to 13,000 dry BPD of oil, based on permit emissions limits of dry crude oil tanks TK-202 and TK-203. As part of the existing production activities, the oil treating facilities at the EOF perform the following functions: remove produced water from the crude oil/water emulsion; reduce the hydrogen sulfide (H₂S) content in the treated crude oil to 70 parts per million (ppm)

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or less (on a weight basis); inject the produced water into a permitted onshore water disposal well; and, deliver the dry crude oil to the 6-inch diameter Line 96. The current typical H₂S content is 5 ppm (0.0005%) at the oil lease automatic custody transfer (LACT). Line 96 runs 8.5 miles northwest to a tie-in point on the Plains pipeline Line 901. Sales gas is delivered to The Gas Company at a public utility gas interconnection on Hollister Avenue west of EOF.

2.3 EOF Truck Loading Equipment and Temporary Trucking Operations

The attached EOF Site plan (Drawing F-9769) shows the oil truck loading location in the central portion of the EOF. This area is also shown in the attached site photographs. The loading equipment consists of an existing LACT unit, temporary hose connections to the vapor recovery system and for truck loading, and associated existing piping and electrical connections. Loading operations will occur within the existing paved and curbed roadway which serves as immediate containment for spilled fluids, if any, which fluids can drain to the onsite sump system which serves as secondary containment.

Piping and Instrumentation Diagrams F-9760-3 and F-9760-7 indicate the temporary truck loading connections including the temporary truck loading hose at the meter prover connections, and a hose connection between truck loading vapors and the EOF vapor recovery unit.

LACT #1 Charge Pump P-222 will be used to transfer crude oil from TK-202 and TK-203 through LACT #1 to the waiting truck. The typical loading rate will be 350 to 450 barrels per hour (BPH), at a pressure of 100 to 150 psig. The LACT skid will continue to operate in the same manner as though the crude oil was being delivered to Line 96. Oil from the LACT will flow through a proving connection to the waiting truck. Oil Shipping Truck P-203 will not be used for the truck loading. The LACT flow meter will be set to deliver the required batch load of 160 barrels of oil, and then automatically shut down the truck loading flow. In the event that the truck fills before the set volume from the LACT is reached, the truck's overflow prevention device (e.g., Scully), will provide secondary loading shutoff.

A truck loading procedure is attached. As the truck arrives, the driver will handle inspection and maintenance on the truck prior to and during the loading procedure. The truck will be loaded with crude oil and will immediately leave the site for transport offsite. The project will not generate a new parking load. No new parking spaces are proposed.

Venoco personnel will be present during loading operations. Truck loading equipment inspections and maintenance will take place consistent with current practice, with additional frequency commensurate with the increased trucking activity.

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2.4 Truck Destinations and Routing

Venoco will ship the crude oil to two identified destinations that can accommodate an addition of two truckloads (320 barrels) per day on a temporary basis: the Phillips 66 Santa Maria Pump Station in Santa Maria and the Santa Paula Crimson Truck Rack in Santa Paula. Phillips 66 has confirmed the feasibility of receiving truck deliveries at either their Santa Maria Pump Station and/or the Santa Paula Crimson Truck Rack subject to further confirmation of available capacity at the time of Venoco's permit approval, and subject to an amended purchase agreement between Phillips 66 and Venoco. Phillips 66 has also confirmed that both locations are fully permitted truck unloading facilities.

If these facilities are not available, then crude oil could be shipped to one or more potential alternative locations such as facilities in the Bakersfield area of Kern County.

The scheduling of shipments to any one location will most likely be based on coordination by the receiving facility. The following sections describe the truck routes to these destinations.

2.4.1 EOF to Santa Maria Pump Station

Truck access from EOF via Hollister Avenue and the US 101/Hollister interchange to Santa Maria Pump Station is via US 101 northbound for 60 miles to the East Betteravia Road exit (Exit 169). Trucks will then run 1 mile east on Betteravia Road, then 0.5 miles north on Rosemary Rd, then 0.4 miles west on Battles Road to the Battles Facility entrance (approximately 62 miles total each way). Figure 1 shows the truck routing between EOF and the Santa Maria Pump Station and the transportation route near the station.

2.4.2 EOF to Santa Paula Crimson Truck Rack

Truck access from EOF via Hollister Avenue and the US 101/Hollister interchange to Santa Paula Crimson Truck Rack is via US 101 southbound for 46 miles to the State Route 126/10th Street interchange in Santa Paula, then 0.75 miles to the facility entrance via E. Harvard Blvd and S. 12th Street (a City-designated truck route). An alternative access is available via the Route 126/Hallock Drive intersection, then 1.2 miles to the facility entrance via E. Telegraph Road, E. Main Street, and N. 12th Street (Figure 2). Trucks would enter the facility main gate on N. 12th Street and then enter the existing crude oil loading facility. Crude oil would be shipped through the facility to refinery destinations.

Table 1 summarizes the potential delivery facilities and affected roadways. No new public or private roads or parking are proposed.

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Table 1 Potential Regional Shipping Destinations

Destination Facility	Facility Address	Affected Roadways
Santa Maria Pump Station (former Battles Facility)	1580 East Battles Road, Santa Maria CA 93454 Lat: 34°55'48.14"N Long: 120°24'25.95"W	Hollister Ave. (west of US 101/Winchester Cyn Road interchange, Exit 110) Betteravia Road (east of US 101) Rosemary Road Battles Road
Santa Paula Crimson Truck Rack	210 N. 12 th Street, Santa Paula CA 93060 Lat: 34°21'29.03"N Long: 119°03'26.66"W	Hollister Ave. (west of US 101/Winchester Cyn Road interchange, Exit 110) State Route 126 to the 10 th Street exit N. 10 th Street E. Harvard Ave. N. 12 th Street Alternate route: State Route 126 to Hallock Drive Hallock Drive E. Telegraph Road E. Main Street N. 12 th Street

2.5 Truck Off-Loading Operations

The following sections describe the planned off-loading destinations.

2.5.1 Santa Maria Pump Station

Deliveries to the Santa Maria Pump Station will use the facility's existing truck off-loading equipment. Venoco is coordinating with Phillips 66 to ensure that these facilities are adequate to accommodate the planned deliveries in terms of physical equipment and in terms of the facility's land use and air quality permits. At this time no permit constraints are anticipated.

2.5.2 Santa Paula Crimson Truck Rack

Deliveries to the Santa Paula Crimson Truck Rack will use the facility's existing truck off-loading equipment which includes a 55,000 barrel capacity floating roof crude oil tank, oil unloading facility, and associated unloading connections and spill containment. Phillips 66 has confirmed to Venoco that the facility can accommodate the planned deliveries. Venoco is continuing to coordinate with this facility to ensure that the facilities are adequate to accommodate the planned deliveries in terms of physical equipment and in terms of the facility's land use and air quality permits. At this time no permit constraints are anticipated.

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2.6 Truck Specifications

Crude transportation trucks and drivers will be Department of Transportation (DOT)-certified for safe transportation of crude oil in accordance with applicable regulations (e.g., 49 CFR 180.407 Requirements for test and inspection of specification cargo tanks). For emissions control, trucks will be compliant with Santa Barbara County APCD Rule 346, Loading of Organic Liquid Cargo Vessels. This rule requires various design features and operational procedures, including:

- Bottom-loading with a vapor control system that is compatible with the loading facility and certified by the California Highway Patrol
- Pressure vacuum release device set at the maximum safe pressure and vacuum ratings
- Primary and secondary overfill protection system with automatic flow shutoff
- Loading connector/adaptor that is compatible with the loading facility
- Inspections, repair, reporting and recordkeeping for fugitive emissions

Trucks will be equipped with particulate filters and other controls that meet or exceed 2011 model year emission control standards as specified in the California Air Resources Board's (CARB) On-Road Heavy-Duty Diesel Vehicles (In-Use) Regulation.

2.7 Air Pollution Control Systems and Emission Estimates

The EOF truck loading equipment will incorporate appropriate controls to minimize the emissions from crude loading operations. Displaced truck vapors will be processed through the vapor recovery system, and other fugitive emission controls will be in place, including incorporation of the current Fugitive Inspection and Maintenance program. Minor adjustments will be made to facility operations to ensure adequate controls are continuously in place during temporary crude oil truck loading operations.

As noted above, trucks will be equipped with recent model engines and appropriate emission-reduction components and operational procedures for crude handling, including bottom-loading with a vapor control system; pressure vacuum release device; primary and secondary overfill protection system with automatic flow shutoff; compatible loading connector/adaptor; and inspections, repair, reporting and recordkeeping for fugitive emissions.

Stationary emissions were estimated based on truck loading and fugitive emission sources at EOF. Truck offloading emissions were also estimated based on typical offloading equipment, storage tanks, and vapor recovery equipment. Mobile emissions were estimated based on a model year 2011 oil tanker truck emission factors from the CARB EMFAC2014 database. Estimated emissions are presented in Table 2.

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The project was evaluated for overall stationary and mobile source air emissions, and emissions were compared to applicable thresholds used by the City of Goleta. The applicable significance thresholds for criteria pollutants and greenhouse gases (GHG) include:

- Nitrogen oxide (NO_x): 25 lbs/day on a mobile basis; 55 lbs/day combined mobile plus stationary
- Reactive organic compounds (ROC): 25 lbs/day on a mobile basis, 55 lbs/day combined mobile plus stationary
- Carbon monoxide (CO): 150 lbs/day for stationary sources
- Particulate matter less than 10 microns (PM₁₀): 80 lbs/day for stationary sources
- GHG: 10,000 metric tons of carbon dioxide equivalent per year (MTCO₂e/YR)

The emissions estimates provided in Table 2 provide several examples of the potential truck loading and truck transportation emissions based on the identified potential transportation routes and the assumption that trips will be split into southbound and northbound directions. A worst-case scenario is presented, assuming half of the trips travel north to the Santa Maria Pump Station and half of the trips travel south to the Santa Paula Crimson Tank Rack. In all cases, the estimated emissions of criteria pollutants are well below the significance thresholds.

The source of GHG emissions is primarily from truck engine combustion emissions. These emissions are based on a specific number of truck loadings (34 trucks over 17 days) and truck travel distances (i.e., 62 miles each way to and from Santa Maria Pump Station and 59 miles each way to and from Santa Paula Crimson Tank Rack).

If actual project related operations and emissions differ from this example, then available mitigations will be adjusted to ensure all environmental impacts remain less than significant.

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Table 2 Emissions Summary

	ROC Emissions			NO _x Emissions			CO Emissions			PM ₁₀ Emissions			PM _{2.5} Emissions			GHG ⁵ MTCO ₂ e/ Yr
	lb/ day	tpq	tpy	lb/ day	tpq	tpy	lb/ day	tpq	tpy	lb/ day	tpq	tpy	lb/d ay	tpq	tpy	
Stationary Source¹																
Truck Loading and Fugitives	1.37	0.01	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-
Offloading	1.37	0.01	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-
Sub-Total Stationary Sources	2.73	0.02	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-
Thresholds of Significance ²	55.00	-	10.00	55.00	-	10.00	150.00	-	25.00	80.00	-	15.00	-	-	-	10,000.00
Mobile Source³																
To/From SM Pump Station	0.01	0.00	0.00	0.64	0.01	0.01	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.21
To/From Santa Paula Crimson Truck Rack	0.01	0.00	0.00	0.59	0.01	0.01	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.95
Thresholds of Significance ²	25.00	-	-	25.00	-	-	-	-	-	-	-	-	-	-	-	10,000.00
Project Totals (Stationary and Mobile)⁴																
SM Pump Station	1.38	0.02	0.01	0.64	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.89
Santa Paula Crimson Truck Rack	1.38	0.02	0.01	0.59	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.73
Total SM Pump Station and Santa Paula Crimson Truck Rack	2.75	0.05	0.05	1.23	0.01	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.16
Thresholds of Significance ²	55.00	-	-	55.00	-	-	150.00	-	-	80.00	-	-	-	-	-	10,000.00

Notes: 1 Stationary emissions were calculated based on up to 2 trucks loaded per day.

2 The thresholds of significance are based on the City of Goleta CEQA Thresholds Manual.

3 Mobile emissions were calculated based on 1 truck roundtrip per day to and from each location for 17 days.

4 Project totals include stationary and mobile emissions for 1 truck per day to and from each location for 17 days.

5 GHG emissions were estimated based on a project duration of 17 days.

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2.8 Traffic Setting

Caltrans data were reviewed in order to understand the existing traffic volumes on the highway segments that would be used for crude oil transportation between EOF and the off-loading facilities. These data are summarized below and presented in Table 3.

Table 3 Highway Segment Volume Data

EOF to Santa Maria Pump Station						
		AADT	Truck AADT	5+ Axle Trucks	5+ Axle Truck %	Notes
Mainline	US 101 (Hollister Rd to E. Betteravia Rd)	33,523	3,564	1,908	5.7%	Actual limits of data set: Hollister to Broadway
Ramps	US 101 NB On Ramp from Cathedral Oaks/Hollister	1,412				
	US 101 SB Off Ramp to Cathedral Oaks/Hollister	1,014				
	US 101 NB Off Ramp to Betteravia	4,080				
	US 101 SB On Ramp from Betteravia	3,520				
EOF to Santa Paula Crimson Truck Rack						
		AADT	Truck AADT	5+ Axle Trucks	5+ Axle Truck %	Notes
Mainline	US 101 (Hollister Rd to Rte 126)	79,638	4,731	2,143	2.7%	
	Rte 126 (Rte 101 to Hallock Dr)	36,563	2,519	1,444	4%	Actual limits of data set: Rte 101 to Rte 23 (A St in Fillmore)
Ramps	US 101 SB On Ramp from Hollister	3,020				
	US 101 NB Off Ramp to Hollister	3,135				
	US 101 SB Off Ramp to Rte 126	16,001				
	US 101 NB On Ramp from Rte 126	15,101				
	Rte 126 EB Off Ramp to 10th St	5,300				
	Rte 126 WB On Ramp from 10th St	5,900				
	Rte 126 EB to Hallock Dr (Alternate route)	N/A				
	Rte 126 WB from Hallock Dr	N/A				

Notes:

1. AADT = Annual Average Daily Traffic
2. Mainline and ramp volumes were taken from Caltrans traffic census data: <http://traffic-counts.dot.ca.gov/>
3. Mainline volumes were taken from 2013 Truck data sheet.
4. Ramp volumes range from 2011 to 2013.

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2.8.1 EOF to Santa Maria Pump Station

An average of 33,523 vehicles per day travel on US 101 between the EOF and Santa Maria. Of this amount, 3,564 vehicles are trucks, and 1,908 of these trucks (about 5.7% of the total AADT) have 5 or more axles (Caltrans, 2013). The estimated additional 1 to 2 crude oil truck trips per day from the EOF to the Santa Maria Pump Station would result in a negligible increase in the existing overall daily traffic volume on this highway segment. Proposed use of the Hollister Avenue segment and the US 101/Hollister Ave. interchange represents no substantive change in the volume of traffic associated with EOF normal operations, which varies dependent on facility activity level.

2.8.2 EOF to Santa Paula Crimson Truck Rack

An average of 79,638 vehicles per day travel on US 101 between the EOF and State Route 126 interchange. Of this amount, 4,731 vehicles are trucks, and 2,143 of these trucks (about 2.7% of the total AADT) have 5 or more axles (Caltrans, 2013).

An average of 36,563 vehicles per day travel on State Route 126 between the US 101/ State Route 126 interchange and State Route 126/10th Street exit (or the alternate exit via the Route 126/Hallock Drive intersection) in Santa Paula. Of this amount, 2,519 vehicles are trucks, and 1,444 of these trucks (about 4% of the total AADT) have 5 or more axles (Caltrans, 2013).

The estimated additional 1 to 2 crude oil truck trips per day from the EOF to the Santa Paula Truck Rack on these highway segments and interchanges would result in a negligible increase in the existing overall daily traffic volume on this highway segment.

2.9 Transportation Risk

The City of Goleta has adopted public safety risk thresholds that are generally the same as the County of Santa Barbara's adopted thresholds. Public safety risk assessment studies have been performed for various proposed energy projects in Santa Barbara County that entail truck transportation of crude oil, NGL or other hazardous materials. Certain risk assessment studies are described below for projects that have similar characteristics to Venoco's proposed project. These assessments utilized statistical data from several studies related to truck transportation risk, including those prepared by the National Highway Transportation Safety Board (NHTSB), the DOT, the California Highway Patrol, studies published in the Journal of Loss Prevention and the Journal of Transportation Engineering, as well as European studies published in the Journal of Hazardous Materials. These data illustrate the very low probability of a truck-related accident resulting in a spill, or spill that ignites into a pool fire from various hazardous materials. The data have been used to quantify the reliability of MC 331 tanker trucks used to transport NGL and single compartment DOT 407 tanker trucks carrying bulk liquids, including crude oil. The risk assessments then applied the probability data and modeled the potential consequences of an

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accident in order to quantify the overall public safety risks. These risk levels were then compared to the adopted thresholds of significance.

A study conducted by Marine Research Specialists (MRS) for Santa Barbara County (2004) on NGL transportation obtained data from Caltrans on major highways in southern California and in the central San Joaquin Valley (i.e., Highways 101, 5, 405 and 166). The study examined collisions for a 10-year period from 1991 to 2001, and collected data on 13,300 collisions associated with over 18.6 billion truck miles. The accident rate for all trucks along all routes examined was estimated to be 0.72 accidents per million miles. Review of the 1990 LPG/NGL study by ADL and other associated studies show it is reasonable to assume a higher accident frequency per mile for undivided highways. For example, a base accident rate of 2.1 accidents per million miles has been used for undivided highway segments, and this rate could apply to undivided highways on certain route segments, such as E. Betteravia Road and other rural roads near the Santa Maria Pump Station. These accident rates are conservative because they take into account all accidents and do not focus only on accidents that resulted in a crude oil spill.

The Initial Quantitative Risk Assessment (QRA) of the ERG Operating Company's (ERG) Foxen Petroleum Pipeline Project (2013) assessed the potential public safety risks associated with the current (3,000 barrels per day) and future interim (9,900 barrels per day) transportation of crude oil by truck. The only direct hazard to public safety posed by truck transport of crude oil was determined to be dependent on the frequency and consequences of a crude oil pool fire. There would be a tangible public safety risk to an individual only if that individual happens to be within the pool fire hazard distance. In general, heavier crude oil impacts are limited to spills and subsequent risk and environmental impacts.

The ERG project QRA found that public safety impacts could occur due to a crude oil fire and subsequent thermal radiation. Typical thermal radiation modeling from a crude spill from a truck loaded with 160 barrels of crude oil indicate that impact distances to fatalities would be limited to about 65 feet and injuries to about 200 feet. This does not include the effects of thermal shielding, such as would occur if persons are located within automobiles or within residences.

The Final Environmental Impact Report (FEIR) for the Southern California Gas Company La Goleta Storage Field Enhancement (2013) evaluated truck transport of NGLs between the La Goleta Storage Facility (located near Goleta Beach) and Oxnard in Ventura County. The risk analysis determined the potential accident rates and spill probabilities associated with increased trucking of NGL transport over baseline conditions. The study found that the potential impacts resulting from the transport of gas condensates would be considered less than significant based on the County's risk criteria, and thus impacts were considered less than significant.

Venoco's proposed crude oil transportation from EOF would use some of the same road segments as were studied in the La Goleta project, but with a higher trip frequency. Nonetheless,

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transport of crude oil presents a lower overall risk than from NGL transportation (on a per barrel spilled basis) because, (1) crude oil has a lower flash point and auto-ignition temperature; (2) NGL/LPGs have greater chance of spreading/vaporizing from the spill site; and (3) the vapor cloud explosion consequence (distance to lethality from the accident) is far greater for NGL/LPG.

A review of the above studies confirms the overall low potential for public safety risks associated with Venoco's proposed temporary crude oil trucking in the project region.

Based on these recent studies it is reasonable to conclude that the overall risk of serious injuries or fatalities from the temporary use of 2 crude oil trucks per day from EOF to and from the planned off-loading destinations will be well within the acceptable range of the City of Goleta's significance thresholds.

2.10 EOF Compliance Plans

Operational and contingency plans that are in place at the EOF will be utilized during temporary trucking operations. The relevant plans already address ongoing truck operations, and are adequate to address potential accidents or spills during the proposed temporary crude oil truck operations. As appropriate, certain plans will be updated to more specifically incorporate the temporary crude oil loading operations. With respect to transportation planning, Venoco implements a set of standard procedures for trucks and other vehicles that access the EOF. Table 3 summarizes several of the EOF compliance plans and their relevance to the temporary trucking operation.

Table 3 Compliance Plans

Operations and Contingency Plan	Plan Description
Oil Spill Contingency Plan (OSCP)	The EOF OSCP addresses various spill scenarios including potential spills from ongoing truck loading operations.
Emergency Response Plan (ERP)	The EOF ERP addresses various accident scenarios including potential spills within the EOF and corresponding response procedures.
Spill Contingency and Countermeasure Plan (SPCC)	The EOF SPCC indicates existing facilities (inclusive of truck operations), containment structures and spill response measures. Potential spills related to the trucking operation would occur on paved surfaces that drain to a sump and disposal systems that is designed for the overall EOF operations.
Fire Protection Plan (FPP)	<p>The EOF FPP addresses various fire/accident scenarios within the EOF and corresponding fire/emergency response procedures. Onsite fire suppression is adequate to address a truck-related incident.</p> <p>The project will comply with NFPA 30 which regulates the loading of flammable liquids, and UFC Article 79 which addresses procedures for loading oil.</p>
Santa Barbara County Fire Department Operational Permit	The EOF Fire Department Operational Permit will remain in effect. This permit is required for loading of flammable liquids and to otherwise

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Operations and Contingency Plan	Plan Description
	install, construct, alter or operate equipment, tanks, plants, terminals, wells, and similar facilities where flammable and combustible liquids are produced, processed, transported, stored dispensed, or used. The permit applies to current NGL loading, and will apply to crude oil loading.
Safety Inspection Maintenance and Quality Assurance Program (SIMQAP)	The EOF SIMQAP addresses fixed, long-term facilities and processes, and is not applicable to temporary trucking.
Transportation Risk Management and Prevention Program (TRMPP) for NGL/LPG transportation	The EOF TRMPP will remain in effect for transportation of NGL/LPG.

2.11 Environmental Measures

Venoco will take prudent steps to mitigate potential impacts posed by the temporary trucking operations. Environmental protection measures will include, at a minimum:

- Restriction of all loading and off-loading activity to existing paved and contained areas within the secured fenced EOF and delivery point facilities.
- Installation of additional secondary containment if needed under the connection points to further prevent the spread of oil or fuels should an incident occur during operations.

With respect to air quality, Venoco will, at a minimum, mitigate new air emissions of criteria pollutants and GHGs to less than significant levels in compliance with City of Goleta Thresholds of Significance and APCD rules. Such mitigation may consist of, but will not be limited to:

- All trucks and loading equipment will be connected to a vapor recovery system.
- Trucks will be equipped with particulate filters and other controls that meet or exceed 2011 model year emission control standards.
- Optimum routes will be taken to the extent feasible, to reduce vehicle miles travelled and mobile emissions.
- Total air emissions and associated mitigation measures will be quantified and reported on a monthly basis throughout the temporary trucking operation.

With respect to public safety, Venoco will, at a minimum:

- Maintain secure gated access to the trucking facility to prevent members of the public from accessing the loading areas.
- Maintain operational fire prevention and response equipment at the loading facility at all times.
- Implement Venoco's standard operating procedures for truck transportation for all trucking activity.
- Have a trained and qualified operator onsite, as well as the truck driver.

Venoco, Inc. Temporary Crude Oil Trucking Project Project Description

With respect to facility noise, proposed truck loading activities will not substantively contribute to the facility's typical industrial noise levels, and fenceline noise levels will not be exceeded. Activity will be consistent with the approved EOF Noise Monitoring and Control Program. This program has various measures to reduce overall facility noise levels due to significant project construction and routine operational activity. Measures include noise monitoring and reporting, as well as a complaint reporting and resolution process.

3.0 REFERENCES

- California Department of Transportation (Caltrans). 1986. Transportation of Hazardous Materials in California by Highway and Rail. Report to the California Legislation. September 1986.
- Caltrans traffic count data, available online at: <http://traffic-counts.dot.ca.gov/>
- County of Santa Barbara. 2013. Final Environmental Impact Report for the Southern California Gas Company La Goleta Storage Field Enhancement. Prepared by the County of Santa Barbara Planning and Development Department. May 2013.
- County of Santa Barbara. 1993. Resolution of the Board of Supervisors of the County of Santa Barbara regarding transportation of NGL/LPG. September 1993.
- Harwood, *et al.* 1993. Procedure for Developing Truck Accident and Release Rates for Hazardous Material Routing. Journal of Transportation Engineering, Volume 119, No. 2, March/April 1993.
- Marine Research Specialists. 2004. Nuevo LPG Transportation Risk Assessment final Draft Report. Ventura, CA. March 2004.
- SRS Tracer Environmental. Initial Quantitative Risk Assessment of the ERG Foxen Petroleum Pipeline Project. June 2013.

**Venoco, Inc. Temporary Crude Oil Trucking Project
Project Description**

ATTACHMENTS

Facility Drawings

- EOF Site Plan and Truck Loading Location (Drawing F-9769)
- EOF Mechanical Flow Diagrams (Drawings F-9760-3 and F-9760-7)

EOF Crude Oil Loading site photographs

EOF Crude Oil Loading Procedure

Truck Routing Maps

- Figure 1. EOF to Santa Maria Pump Station
- Figure 2. EOF to Santa Paula Crimson Truck Rack

Other Land Use Application Documents

- EOF Property Quitclaim Deed
- Assessor Parcel Map
- Mailing List Noticing Map
- Noticing Mailing List

Venoco, Inc. Temporary Crude Oil Truck Transportation Project
Site Photos of the EOF Truck Loading Area



Photo 1. View east toward the LACT proving connection.

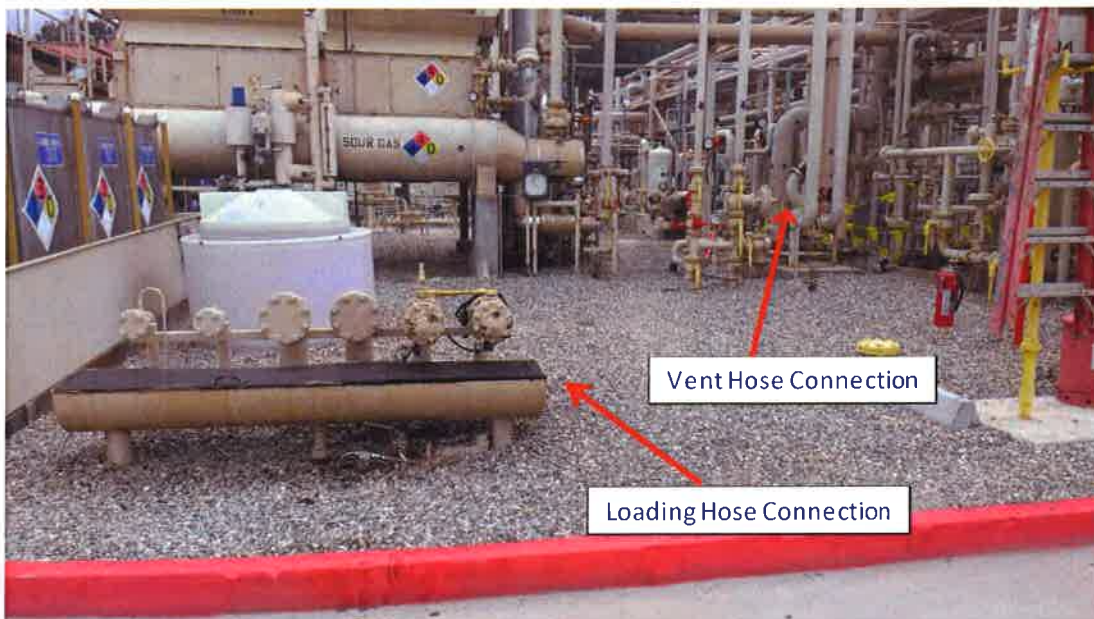


Photo 2. LACT proving connection. The loading hose would be attached to the right-most connection in the picture. The vent hose would attach to a connection in the background.

**Venoco, Inc. Temporary Crude Oil Truck Transportation Project
Site Photos of the EOF Truck Loading Area**



Photo 3. View west past the LACT proving connection. EOF main entrance is out of the picture to the right.

STANDARD OPERATING PROCEDURE

Venoco, Inc.

Facility: Ellwood Onshore Facility



Procedure No: EOF-0001

Procedure Name: Crude Oil Tanker Truck Loading

Operating Procedure: Temporary Operations **Facility Process:** Miscellaneous

Revision Date: 06/19/2015 **Reviewed Date:** 06/19/2015 **Created By:** MacDonald, Jeff **Approved By:**

Memo: EOF operations will notify one of three unloading facilities whenever a truck is enroute, they will provide truck number and time of departure. Unloading Facilities are Crimson Truck Rack (Santa Paula), and or Santa Maria Pump Station.

Step	Action	Comments	Sign-Off
1	Upon arrival of truck, Operations will complete the required work permits, and make sure that all PPE (Hardhat, Safety glasses, and FR clothing) is to be worn.	1. Only one General Work Permit will be required per 12 hour shift. 2. Other safety items in and around the loading area are UV Fire monitors, Foam monitors, and fire extinguishers	
2	Truck Driver must have wheel chocked, and placards must have proper ID number on the truck.		
3	Operations will Ensure ground cable is connected to truck.		
4	Connect vapor hose to truck and open valve to equalize with VRU system.	Ensure necessary connection seals are present in hose and in good condition.	
5	Connect truck loading hose to Main loading valve connection line. Place drip pan under truck where loading hose connects. (This is to collect any drips after removing hose).	Ensure necessary connection seals are present in hose and in good condition.	
6	Operations will now verify valve alignment is correct for the tanker to be loaded.		
7	Truck driver will now open Inlet loading (valves) and Insure that truck is ready to receive oil for tanks.		
8	Operations will now open Main Loading Valve and Line.	Operations will standby to monitor the entire pump loading process.	
9	Operations will select the amount (Barrels) to load on LACT #1 and then start P-222 loading pump.	Operations will standby to monitor the entire pump loading process.	
10	Once desired oil barrels have been loaded LACT #1 will shut down and operations will ensure that (ALL) loading valves have been close. When disconnecting loading hose remaining product is drained to the containment pan or trough.		

STANDARD OPERATING PROCEDURE

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Memo: EOF operations will notify one of three unloading facilities whenever a truck is enroute, they will provide truck number and time of departure. Unloading Facilities are Crimson Truck Rack (Santa Paula), and or Santa Maria Pump Station.

Step	Action	Comments	Sign-Off
11	Operations will now close vapor Valve and disconnect vapor hose from truck.		
12	Disconnect ground cable from Truck, document truck number and time of departure.		
13	EOF operations will notify one of three locations that the truck is now enroute, and will provide truck number, time of departure, and proper shipping papers.	Crimson Truck Rack (Santa Paula) or Santa Maria Pump Station Phone numbers will be added once received.	
14	Once truck has left the EOF Facility Operations is to make sure that there to clean up any engine drips on road.		

VENOCO EOF CAUSE AND EFFECT CHART TEMPORARY TRUCK LOADING, INCL LACT, & TANK LEVELS

X or E=Energize (OPEN)
 D=Denergize (CLOSE)
 P= Permissive
 C= Control
 S=Secondary Control

ITEM	SERVICE	P&ID	CAUSE	DEVICE I.D.	ALARM - ELLWOOD CONTROL ROOM	INDICATE PROCESS VARIABLE - ELLWOOD CONTROL ROOM	INDICATE STATUS - ELLWOOD CONTROL ROOM	P-222 ELLWOOD LACT #1 CHARGE PUMP F-9760-7	ELLWOOD SHIPPING PUMP RECYCLE VALVE F-9760-35	OIL DIVERT VALVE F-9760-7	TRUCK LOADING VALVE	REMARKS
1	ELLWOOD LACT SHUTDOWN SIGNAL	F-9760-7										
2	ELLWOOD ESD											
2	OIL SHIPPING TANK LEVEL	F-9760-6	LI-202A	LIT-202A								PRIMARY LEVEL INDICATOR FOR TK-202
3	OIL SHIPPING TANK LEVEL ALARM LOW	F-9760-6	LAL-202A	LIT-202A	X							
4	OIL SHIPPING TANK LEVEL SHUTDOWN LOW	F-9760-6	LALL-202A	LIT-202A	X							
5	OIL SHIPPING TANK LEVEL ALARM HIGH	F-9760-6	LAH-202A	LIT-202A	X							
6	OIL SHIPPING TANK LEVEL	F-9760-6	LI-202B	LIT-202B								SECONDARY LEVEL INDICATOR FOR TK-202
7	OIL SHIPPING TANK LEVEL ALARM LOW	F-9760-6	LAL-202B	LIT-202B	X							
8	OIL SHIPPING TANK LEVEL SHUTDOWN LOW	F-9760-6	LALL-202B	LIT-202B	X							
9	OIL SHIPPING TANK LEVEL ALARM HIGH	F-9760-6	LAH-202B	LIT-202B	X							
10	OIL SURGE TANK LEVEL	F-9760-6	LI-203A	LIT-203A								LEVEL INDICATOR FOR TK-203
11	OIL SURGE TANK LEVEL ALARM LOW	F-9760-6	LAL-203A	LIT-203A	X							
12	OIL SURGE TANK LEVEL SHUTDOWN LOW	F-9760-6	LALL-203A	LIT-203A	X							
13	OIL SURGE TANK LEVEL ALARM HIGH	F-9760-6	LAH-203A	LIT-203A	X							
14	LEVEL CONTROL SELECTOR SWITCH	F-9760-6		HS-202			X					SELECTS LI TO CONTROL LIC-202
15	SHIPPING TANK LEVEL	F-9760-6	LI-202	LIC-202		X						INDICATE & CONTROL BASED ON HS 202
16	SHIPPING TANK LEVEL ALARM LOW	F-9760-6	LAL-202	LIC-202	X							ALARM BASED ON HS 202
17	SHIPPING TANK LEVEL SHUTDOWN LOW	F-9760-6	LALL-202A	LIC-202	X			D				SHUTDOWN BASED ON HS 202
18	SHIPPING TANK LEVEL ALARM HIGH	F-9760-6	LAH-202	LIC-202	X							ALARM BASED ON HS 202
19	OIL BS&W	F-9760-7	AI-313	AT-313		X				P		
20	OIL BS&W ALARM	F-9760-7	AAH-313	ASH-313	X							
21	OIL BS&W SHUTDOWN	F-9760-7	AAHH-313	ASHH-313	X					D		
22	OIL FLOWRATE	F-9760-7	FI-220	FIT-220		X						
23	EOF OIL FLOWRATE ALARM LOW	F-9760-7	FAL-220	FIT-220	X							
24	EOF OIL FLOWRATE SHUTDOWN LOW	F-9760-7	FALL-220	FIT-220	X							
25	EOF OIL FLOWRATE ALARM HIGH	F-9760-7	FAH-220	FIT-220	X							
26	EOF OIL FLOWRATE SHUTDOWN HIGH	F-9760-7	FAHH-220	FIT-220	X							
27	EOF SEISMIC ALARM, 13% OF G OR GREATER				X							
28	CRUDE OIL TRUCK SCULLY GROUND CONNECTED										D	ON TRUCK
29	CRUDE OIL TRUCK SCULLY LEVEL NOT HIGH										P	ON TRUCK